

PATENT SPECIFICATION

Inventor: ROBERT MONROE SMITH



794,317

Date of Application and filing Complete Specification Aug. 10, 1956.

No. 24492/56.

Complete Specification Published April 30, 1958.

Index at Acceptance: — Class 56, M2A1.

International Classification: — C03b.

COMPLETE SPECIFICATION

Chute for Conveying Molten Glass

We, OWENS-ILLINOIS GLASS COMPANY, a Corporation organised under the Laws of Ohio, United States of America, of Toledo 1, Ohio, United States of America, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

10 This invention relates to a guide surface for conveying molten glass.

15 A feature of the present invention is the provision of a guide surface for conveying molten glass characterized by a coating bonded to the surface and containing a thermosetting resin and a lubricating filler.

20 The accompanying drawing is a partial sectional view of an apparatus in which the invention may be embodied and employed.

25 Referring to the drawing, molten glass 10 is shown in a feeder 11. The feeder 11 is of conventional construction and is provided with a plunger 12 reciprocable in opening 13 to form gobs or charges 14 of molten glass. These gobs are severed from the body of glass by shears 15. The severed gobs fall freely and are guided by a chute 16 to funnel 17 which in turn directs the gobs to molds 18. The chute 16 may consist of several sections 30 19, 20 and 21.

35 Each of the sections 19, 20 and 21 of the chute 16 is provided with a coating 22 having the composition and made in accordance with my invention.

40 I have determined that a coating having the desired properties comprises a thermosetting resin, such as a phenolformaldehyde or phenolic resin, and a filler, such as graphite. The composition of the ingredients may be varied within wide limits to provide the exact results desired. For example, I have found that a satisfactory coating will have the composition: 60% phenolic resin, 40% graphite. However the desired results can be obtained 45 within the following limits: 20—95%

[Price]

phenolic resin, 5—80% graphite. If the amount of phenolic resin is increased the wearing properties of the coating are increased but the speed of travel of the gob is decreased; whereas, if the amount of graphite is increased, the wearing properties of the coating are decreased and the speed of travel of the gob is increased.

50 In applying the coating to the chute, the chute is first thoroughly cleaned by solvents, blasting or in any other suitable manner. The thermosetting resin and graphite are intimately mixed with a thinner and the mixture is then applied to the chute by painting, spraying, or dipping. The coated chute is then baked to volatilize the thinner, cure the resin and bond it to the chute. A heavy coating or successive coatings may be applied, the thicker the coating the longer the life of the coating.

55 I have conducted extensive tests on coatings such as these and have found that the chute coated as described offers distinct advantages not heretofore obtained. For example, the time of travel is uniform and constant as contrasted to bare chutes or chutes swabbed with oil or oil dope. The frictional drag is decreased to a minimum so that the shape or surface of the gob is not altered. The coating does not contaminate the surface of the gob, and is resistant to heat. Oil and water do not affect the coating. The coating made in accordance with this invention thus possesses all the desired properties of such a coating.

60 A further advantage of chutes coated in accordance with the invention is that it is possible to obtain speeds of travel of the gob not heretofore possible. This is especially of value in present day development of high speed glass making machines where one limitation has been the speed of travel of the gob to the machine. By utilizing coatings in accordance with the invention it is possible to operate these new machines at higher speeds.

50

55

60

65

70

75

80

85

90

In these machines, a coating having the composition, 60% graphite, 40% resin, has been found to be satisfactory.

5 I have also determined that materials other than graphite may be used. For example, molybdenum disulphide is resistant to high temperature and has the desired lubricating properties.

What we claim is:—

- 10 1. A guide surface for conveying molten glass characterized by a coating bonded to the surface and containing a thermosetting resin and a lubricating filler.
15 2. The guide surface as claimed in Claim 1, further characterized by the lubricating filler being graphite.
3. The guide surface of Claim 1, further characterized by the filler being molybdenum disulphide.

4. The guide surface of any of the preceding claims, in which the thermosetting resin is a phenolic resin.

20 5. The guide surface of any of the preceding claims, further characterized by the surface being downwardly inclined to form a guide for receiving gobs of molten glass from a glass feeder and for delivering the gobs of molten glass to a glass forming machine.

25 6. A guide surface for conveying molten glass having a resin and lubricating filler coating substantially as herein particularly described with reference to and as illustrated in the accompanying drawing.

W. P. THOMPSON & CO.,
12, Church Street, Liverpool, 1,
Chartered Patent Agents.

Leamington Spa: Printed for Her Majesty's Stationery Office, by the Courier Press.—1958
Published at the Patent Office, 25, Southampton Buildings, London, W.C.2. from which
copies may be obtained.



794,317 COMPLETE SPECIFICATION

1 SHEET

*This drawing is a reproduction of
the Original on a reduced scale.*



